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Android Programming - Course Contents (48 Hours Approx)

Pre-requisite : Core Java

About Android

- Android history and versions
- Android Architecture
- Android Studio Basics
 - System Requirements
 - Downloading and Installing Android Studio
 - Keeping it Up-to-Date

Test Drive Android

- Confirm your installation works
- Creating New Hello World Project
- Creating AVD
- Running a program on AVD
- Running a program on actual Android device

Android Application Ingredients

- Traditional Desktop Application Compared to Android
- Activities, Intents and Tasks
- Services, Content Providers, Broadcast Receivers
- Static Application Resources
- Context
- Manifest file
- The activity Life Cycle
- Packaging Android Application: The .apk file

Android User interface

- Overview of GUI
- Building View

- Layouts
 - UI Components
 - Styles
- Understanding Activity
 - Layout for Activity
 - Accessing Layout UI elements in code
 - Dynamically adding UI elements in layout
 - Launching another Activity
 - Passing data to launched activity
 - Accessing results returns by the launched activity
 - Activity lifecycle
 - The Menu
 - Fragments
 - Creating a Fragment
 - Fragment lifecycle
 - The Compatibility Package

List UI Components and Adapters

- Fundamentals of working with any List type UI component
 - ListView
 - AutoCompleteTextView
 - Spinner
- Showing static data in a List
- Using adapter to generate the List

Handling and Persisting Data

- Relation Database Overview
- SQLite Database
- SQL Language
- Android Database classes
- Storing and Retrieving Data

Content Providers

- Understanding Content Provider
- Implementing Content Provider
- Defining Provider Public API
- File Management
- Declaring Content Provider

Location and Maps

- Location Based Services

- Working with Google Maps
- MapView and MapActivity

Using other apps on the device

- Accessing Contacts
- Sending and Receiving data using SMS
- Sending Emails
- Using Camera for Pics
- Using Camera for Videos

Network, Wi-Fi

- Managing Networks and Internet Connectivity
- Working with Wi-Fi

Services, Broadcast Receivers and Intent Filters

- Overview
- Implementing Services
- Service Lifecycle
- Inter Process Communication
- Overview of Broadcast Receivers
- Implementing Broadcast Receivers
- System Broadcast and how to use
- Role of Filters
- Intent-Matching Rules
- Filters in Manifest
- Filters in Broadcast Receivers

Pushing and Pulling data from and to the server from device

- Sending Http requests to a server
- Handling Json data